

## SEQUENCE LISTING

<110> Japan as represented by Secretary of Agency of Industrial Science and Technology

<120> Modulate aptamers and the method of detecting target proteins using them

<130> PH-933-PCT

<160> 21

<170> PatentIn Ver. 2.0

<210> 1

<211> 35

<212> RNA

<213> Artificial Sequence

<220>

<223> aptamer RNA for HIV-1 Tat protein

<400> 1

cgaagcuuga ucccguuugc cggucgaucg cuucg

35

<210> 2

<211> 59

<212> RNA

<213> Homo sapiens

<400> 2

gggucucucu gguuagacca gauuugagcc ugggagcucu cuggcuaacu agggaaccc 59

<210> 3

<211> 124

<212> RNA

<213> Homo sapiens

<400> 3

gggucgcucu gcggagaggc uggcagauug agcccuggga gguucucucc agcacuagca 60

gguagagccu gggaguuccc ugcuaagacuc ucaccagcac uuggccggug cugggcagac 120

ggcc 124

<210> 4

<211> 36

<212> PRT

<213> Homo sapiens

<400> 4

Cys Phe Thr Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg

1

5

10

15

Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser

20

25

30

Leu Ser Lys Gln

35

<210> 5

<211> 38

<212> PRT

<213> Homo sapiens

<400> 5

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Lys | Arg | Arg | Gln | Arg | Arg | Arg | Pro | Pro | Gln | Gly | Ser | Gln | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gln | Val | Ser | Leu | Ser | Lys | Gln | Pro | Thr | Ser | Gln | Ser | Arg | Gly | Asp |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Gly | Pro | Lys | Glu |
|     |     |     |     | 35  |     |

<210> 6

<211> 32

<212> PRT

<213> Homo sapiens

<400> 6

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Phe | Leu | Asn | Lys | Gly | Leu | Gly | Ile | Cys | Tyr | Glu | Arg | Lys | Gly | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Arg | Thr | Pro | Lys | Lys | Thr | Lys | Thr | His | Pro | Ser | Pro | Thr | Pro |
|     |     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |

<210> 7

<211> 14

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 7

aagcuugauc ccga

14

<210> 8

<211> 13

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 8

agcuugaucc cga

13

<210> 9

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 9

gaagcuugau cccgag

16

<210> 10

<211> 12

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 10

agcuugaucc ca

12

<210> 11

<211> 14

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 11

ucggucgauc gcuu

14

<210> 12

<211> 13

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 12

cggucgaucg cuu

13

<210> 13

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 13

cucggucgau cgcuuc

16

<210> 14

<211> 12

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 14

uggucgaucg cu

12

<210> 15

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 5'-half oligonucleotide

<400> 15

gaagccugau cccgag

16

<210> 16

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 3'-half oligonucleotide

<400> 16

cucggccgau cgcuuc

16

<210> 17

<211> 11

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 5'-half oligonucleotide

<400> 17

cagauuugau c

11

<210> 18

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 18

gaagcuugau cccgaa

16

<210> 19

<211> 19

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 19

ucggucgauc gcuucauaa

19

<210> 20

<211> 25

<212> RNA

<213> Artificial Sequence



<220>

<223> molecular beacon aptamer

<400> 20

cgcggaagcuu gaucgggaga gcuua

25

<210> 21

<211> 25

<212> RNA

<213> Artificial Sequence

<220>

<223> oligonucleotide complementary to molecular beacon aptamer

<400> 21

gaagcucucg ggaucagcu ucgcg

25

## SEQUENCE LISTING

<110> Kumar, Penmetcha  
Yamamoto, Rika

<120> MODULATE APTAMER AND METHOD OF DETECTING  
TARGET PROTEIN BY USING THE SAME

<130> 11283-020US1

<140> US 10/089,212

<141> 2002-03-26

<150> PCT/JP00/01969

<151> 2000-03-29

<150> JP 1999-288677

<151> 1999-10-08

<160> 21

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 35

<212> RNA

<213> Artificial Sequence

<220>

<223> aptamer RNA for HIV-1 Tat protein

<400> 1

cgaagcuuga ucccguuugc cggucgaucg cuucg

35

<210> 2

<211> 59

<212> RNA

<213> Homo sapiens

<400> 2

gggucucucu gguuagacca gauuugagcc ugggagcucu cuggcuaacu agggaaccc

59

<210> 3

<211> 124

<212> RNA

<213> Homo sapiens

<400> 3

gggucgcucu gcggagagggc uggcagauug agcccuggga gguucucucc agcacuagca  
gguagagccu gggaguuccc ugcuagacuc ucaccagcac uggccggug cugggcagac  
ggcc

60

120

124

<210> 4

<211> 36

<212> PRT

<213> Homo sapiens

## SEQUENCE LISTING

<110> Kumar, Penmetcha  
Yamamoto, Rika

<120> MODULATE APTAMER AND METHOD OF DETECTING  
TARGET PROTEIN BY USING THE SAME

<130> 11283-020US1

<140> US 10/089,212

<141> 2002-03-26

<150> PCT/JP00/01969

<151> 2000-03-29

<150> JP 1999-288677

<151> 1999-10-08

<160> 21

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 35

<212> RNA

<213> Artificial Sequence

<220>

<223> aptamer RNA for HIV-1 Tat protein

<400> 1

cgaagcuuga ucccguuugc cggucgaucg cuucg

35

<210> 2

<211> 59

<212> RNA

<213> Homo sapiens

<400> 2

gggucucucu gguuagacca gauuugagcc ugggagcucu cuggcuaacu agggaaccc

59

<210> 3

<211> 124

<212> RNA

<213> Homo sapiens

<400> 3

gggucgcucu gcggagagggc uggcagauug agcccuggga gguucucucc agcacuagca  
gguagagccu gggaguuccc ugcuagacuc ucaccagcac uuggccggug cugggcagac  
ggcc

60

120

124

<210> 4

<211> 36

<212> PRT

<213> Homo sapiens

&lt;400&gt; 4

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Phe | Thr | Thr | Lys | Ala | Leu | Gly | Ile | Ser | Tyr | Gly | Arg | Lys | Lys | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Gln | Arg | Arg | Arg | Pro | Pro | Gln | Gly | Ser | Gln | Thr | His | Gln | Val | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Ser | Lys | Gln |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 35  |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 5

&lt;211&gt; 38

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Lys | Arg | Arg | Gln | Arg | Arg | Arg | Pro | Pro | Gln | Gly | Ser | Gln | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| His | Gln | Val | Ser | Leu | Ser | Lys | Gln | Pro | Thr | Ser | Gln | Ser | Arg | Gly | Asp |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Pro | Thr | Gly | Pro | Lys | Glu |     |     |     |     |     |     |     |     |     |     |
|     |     | 35  |     |     |     |     |     |     |     |     |     |     |     |     |     |

&lt;210&gt; 6

&lt;211&gt; 32

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Phe | Leu | Asn | Lys | Gly | Leu | Gly | Ile | Cys | Tyr | Glu | Arg | Lys | Gly | Arg |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Arg | Arg | Thr | Pro | Lys | Lys | Thr | Lys | Thr | His | Pro | Ser | Pro | Thr | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

&lt;210&gt; 7

&lt;211&gt; 14

&lt;212&gt; RNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; 5'-half oligonucleotide of modulate aptamer

&lt;400&gt; 7

aagcuugauc ccga

14

&lt;210&gt; 8

&lt;211&gt; 13

&lt;212&gt; RNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; 5'-half oligonucleotide of modulate aptamer

&lt;400&gt; 8

agcuugaucc cga

13

&lt;210&gt; 9

&lt;211&gt; 16

<212> RNA  
<213> Artificial Sequence

<220>  
<223> 5'-half oligonucleotide of modulate aptamer

<400> 9  
gaagcuugau cccgag 16

<210> 10  
<211> 12  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> 5'-half oligonucleotide of modulate aptamer

<400> 10  
agcuugaucc ca 12

<210> 11  
<211> 14  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> 3'-half oligonucleotide of modulate aptamer

<400> 11  
ucggucgauc gcuu 14

<210> 12  
<211> 13  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> 3'-half oligonucleotide of modulate aptamer

<400> 12  
cggucgaucg cuu 13

<210> 13  
<211> 16  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> 3'-half oligonucleotide of modulate aptamer

<400> 13  
cucggucgau cgcuuc 16

<210> 14  
<211> 12  
<212> RNA  
<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 14

uggucgaucg cu

12

<210> 15

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 5'-half oligonucleotide

<400> 15

gaagccugau cccgag

16

<210> 16

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 3'-half oligonucleotide

<400> 16

cucggccgau cgcuuc

16

<210> 17

<211> 11

<212> RNA

<213> Artificial Sequence

<220>

<223> altered 5'-half oligonucleotide

<400> 17

cagauuugau c

11

<210> 18

<211> 16

<212> RNA

<213> Artificial Sequence

<220>

<223> 5'-half oligonucleotide of modulate aptamer

<400> 18

gaagcuugau cccgaa

16

<210> 19

<211> 19

<212> RNA

<213> Artificial Sequence

<220>

<223> 3'-half oligonucleotide of modulate aptamer

<400> 19

ucggucgauc gcuucauaa

19

<210> 20

<211> 25

<212> RNA

<213> Artificial Sequence

<220>

<223> molecular beacon aptamer

<400> 20

cgcgaagcuu gaucgccgaga gcuua

25

<210> 21

<211> 25

<212> RNA

<213> Artificial Sequence

<220>

<223> oligonucleotide complementary to molecular beacon  
aptamer

<400> 21

gaagcucucg ggaucaagcu ucgcg

25